

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(Currently Amended)** A method of bonding an upper substrate and a lower substrate in order to manufacture a plastic micro chip comprising the upper substrate, the lower substrate and a sample filling space having a predetermined height for filling a sample between the upper and lower substrates, the method comprising the steps of:

~~(a) forming a fine channel space for filling a bonding organic solvent in a bonding region of a circumference of the sample filling space; and~~

~~(b) introducing an organic solvent into the fine channel space to bond the upper and lower substrates wherein the fine channel space is a sealed region between the upper and lower substrates.~~

(a) forming recesses in each of side lower ends of a bonding region of the upper substrate, wherein the bonding region is a circumference region of the sample filling space; and

(b) overlapping the upper substrate and the lower

substrate each other, and then introducing the organic solvent into the recesses to bond the upper and lower substrates, wherein the recesses are open channels and the organic solvent is introduced into the recesses by capillary phenomenon, wherein the bonding region is bonded by the organic solvent introduced into the recesses.

2. **(Currently Amended)** A method of manufacturing a plastic micro chip comprising an upper substrate, a lower substrate and a sample filling space having a predetermined height for filling a sample between the upper and lower substrates, the method comprising the steps of:

~~(a) forming a fine channel space for filling a bonding organic solvent in a bonding region of a circumference of the sample filling space; and~~

~~(b) overlapping the upper and lower substrates each other, and then introducing the organic solvent into the fine channel to bond the upper and lower substrates~~

~~wherein the fine channel space is a sealed region between the upper and lower substrates.~~

(a) forming recesses in each of side lower ends of a bonding region of the upper substrate, wherein the bonding region

is a circumference region of the sample filling space; and

(b) overlapping the upper substrate and the lower substrate each other, and then introducing the organic solvent into the recesses to bond the upper and lower substrates,

wherein the recesses are open channels and the organic solvent is introduced into the recesses by capillary phenomenon,

wherein the bonding region is bonded by the organic solvent introduced into the recesses.

3. **(Original)** The method according to claim 2, further comprising a step of forming one or more holes for introducing the organic solvent communicating with the fine channel when the fine channel is formed in the step of (a).

4. **(Original)** The method according to claim 2, further comprising a step of performing a corona or plasma treatment for the bonding area so that the organic solvent subsequently introduced smoothly flows and a bonding strength is increased, after forming the fine channel.

5. **(Original)** The method according to claim 2, wherein the fine channel has height of 100 μ m or less.

6. **(Original)** The method according to claim 2, wherein the step of (b) further comprises a sub-step of pressurizing or decompressing the fine channel after introducing the organic solvent into fine channel.

7. **(Previously Presented)** The method according to claim 1, wherein the organic solvent is at least one selected from a group consisting of ketone, aromatic hydrocarbon, cyanoacrylate compound and halogenated hydrocarbon.

8. **(Previously Presented)** The method according to claim 7, wherein the organic solvent is at least one selected from a group consisting of acetone, chloroform, methylene chloride, ethylcyanoacrylate and carbon tetrachloride.

9. **(Previously Presented)** The method according to claim 1, wherein the upper and lower substrates are made of polycarbonate, polystyrene, polypropylene, polyethylene derivatives or polymethylmethacrylate.

10. **(Currently Amended)** A plastic micro chip comprising:

an upper substrate, a lower substrate, a sample filling space having a predetermined height for filling a sample between the upper and lower substrates; and

a fine channel space recesses formed in each of side lower ends of a bonding region of the upper substrate for filling introducing an organic solvent so as to bond the upper and lower substrates in a bonding region of a circumference of the sample filling space of the upper substrate,

wherein the fine channel space is a sealed region between the upper and lower substrates

wherein the recesses are open channels and the organic solvent is introduced into the recesses by capillary phenomenon,

wherein the bonding region is bonded by the organic solvent introduced into the recesses.

11. **(Original)** The plastic micro chip according to claim 10, further comprising one or more holes for introducing the organic solvent communicating with the fine channel.

12. **(Original)** The plastic micro chip according to claim 10, wherein the organic solvent is at least one selected from a group consisting of ketone, aromatic hydrocarbon, cyanocrylate compound and halogenated hydrocarbon.

13. **(Original)** The plastic micro chip according to claim 12, wherein the organic solvent is at least one selected from a group consisting of acetone, chloroform, methylene chloride, ethylcyanoacrylate and carbon tetrachloride.

14. **(Original)** The plastic micro chip according to claim 10, wherein the fine channel has a height of 100 μ m or less.

15. **(Original)** The plastic micro chip according to claim 10, wherein the bonding region is transparent.

16. **(Original)** The plastic micro chip according to claim 10, wherein the upper and lower substrates are made of polycarbonate, polystyrene, polypropylene, polyethylene derivatives, polymethylmethacrylate or acryl-based plastic material.

17. **(Previously Presented)** The method according to claim 2, wherein the organic solvent is at least one selected from a group consisting of ketone, aromatic hydrocarbon, cyanoacrylate compound and halogenated hydrocarbon.

18. **(Previously Presented)** The method according to claim 17, wherein the organic solvent is at least from a group

consisting of acetone, chloroform, methylene chloride, ethylcyanoacrylate and carbon tetrachloride.

19. **(Previously Presented)** The method according to claim 2, wherein the upper and lower substrates are made of polycarbonate, polystyrene, polypropylene, polyethylene derivatives or polymethylmethacrylate.

20. **(New)** A method for making a plastic micro chip comprising:

(a) providing an upper substrate and a lower substrate, the lower substrate and the upper substrate being adapted to be joined together along an interface in such a way as to define therebetween a sample filling space having a predetermined height, the sample filling space being entirely surrounded by solid plastic;

further adapted to provide a fine channel within the solid plastic surrounding the sample filling space, the fine channel being provided at and open to the interface between the upper substrate and lower substrate;

further adapted to provide solvent delivery holes whereby solvent can be delivered to the fine channel;

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(b) bringing the upper substrate and lower substrate together into a laminating position;

(c) introducing organic solvent into the fine channel to join the upper substrate with the lower substrate, with the organic solvent passing through the fine channel and effecting bonding by movement of the organic solvent by capillary action.